29 Eleventh Road
Kew
Johannesburg
2090

Private Bag 1
Bramley
2018

Tel: +27 (0)11 430 8700
Fax: +27 (0)11 887 6884
Cell: +27 (0)84 201 2564
email: cobus.van-schalkwyk@actom.co.za

Mk4 ESDP

The ACTOM Industry Mk4 ESDP system is one of the best Electronic Speed Distance Protection systems on the market. This dual line system, designed as an upgrade to the Mk3 ESDP system currently installed on more than 20 mine hoists in Southern Africa, confirms the status of ACTOM Industry as a market leader on Mine Winder Systems. The Mk4 ESDP system can be used to replace all types of mechanical or electrical speed distance protection devices with minimal downtime.

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Mk4 ESDP OVERVIEW

Current Electric was established in 1982 and is the leading manufacturer of Current and Voltage Transformers in South Africa, in June 2008 the business was acquired by ACTOM Group (previously known as Alstom Electrical Industries). The product range comprises of Current Transformers up to 33kV and Voltage Transformers up to 22kV for use in medium voltage reticulation products.

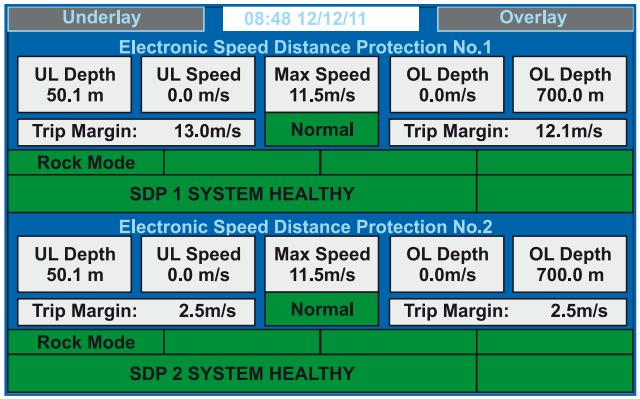
PROTECTION FUNCTIONS

- Overspeed – Complete envelope and mid-shaftoverspeed, configurable for inch, creep, sling, men and rock modes individually.
- Overwinds – Forward and reverse overwinds. Top and bottom overwinds individually configurable.
- Brakes monitoring – Brakes retardation rate monitoring.
- Degree of protection – Displays the degree of protection in false bank testing.
- Safety Circuit supervision – Issues a trip command to test the Safety Circuit integrity after every power up.
- Three turn warning – Output relay for three turn warning.
- Alternative Braking Trip – Output trip relay for alternative braking with separately configurable envelope.

FEATURES

HMI

Large 8'' touch screen HMI fitted. Elegant displays depicting important and relevant information.



Mk4 ESDP - HMI

Safety Features

Dual processors, each with its own encoders perform all safety functions independently. Software on these two different processors was coded by two different engineers to eliminate common mode faults. Pulsed relay outputs – if an output from a processor freezes in a state (on or off) the output relay will de-energize. Twin output relays connected in series. The contacts are rated for 250Vdc and 5Adc.

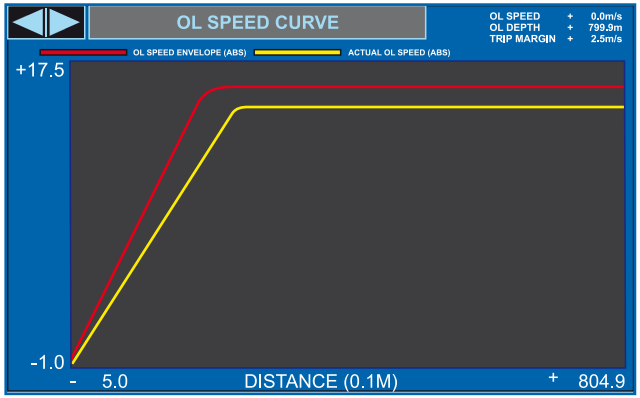
A useful tool for faultfinding, the Mk4 ESDP keeps a record of alarms raised and trips generated.

Parameter Crosschecking

All parameters are saved on a compact flash card. There are pre-programmed minimum and maximum parameters to ensure that the system is not configured in an unsafe manner. The two ESDP processors receive setpoint parameter data from separate setup screens on the HMI via separate communication links. Each set of parameters are transferred to the other ESDP processor for crosschecking purposes. As an optional extra, the ESDP information can be displayed on the driver's screen depending on the type of winder Control PLC or remote displays fitted.

Protection Envelope

Individually configurable parameters for rock speed, men speed, creep speed, inch speed, and slinging speed. Quick and easy shaft parameter configuration – enabling it to be used on sinkingoperations. Distance derived from absolute encoders; therefore even in the event of a power failure the system knows exactly where the conveyances are.



Mk4 ESDP - HMI Protection Envelope Display

Setup

Calibrating the unit is done in one complete wind.Stop the winder at the top station, push 3 buttonson the HMI, wind to the bottom and push another 3 buttons and the calibration procedure is completed. Provision is made for a sinking operationwhere the shaft "bottom" needs to be adjusted daily.